Peacock, A., Leung, J., Larney, S., Colledge, S., Hickman, M., Rehm, J., Giovino, G. A., West, R., Hall, W., Griffiths, P., Ali, R., Gowing, L., Marsden, J., Ferrari, A. J., Grebely, J., Farrell, M., & Degenhardt, L. (2018). Global statistics on alcohol, tobacco and illicit drug use: 2017 status report. *Addiction*, *113*(10), 1905-1926. https://doi.org/10.1111/add.14234

SUPPLEMENTARY MATERIALS

Cannabidiol reverses attentional bias to cigarette cues in a human experimental model of tobacco withdrawal.

Hindocha, C[1*]., Freeman, T.P[1,2]., Grabski, M[1,3]., Stroud, J.B[1]., Crudgington, H[1]., Davies, A.C.[1]., Das, R.K[1]., Lawn, W[1]., Morgan, C.J.A[1,4]., Curran, H.V.[1]

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Running Head: CANNABIDIOL FOR TOBACCO WITHDRAWAL

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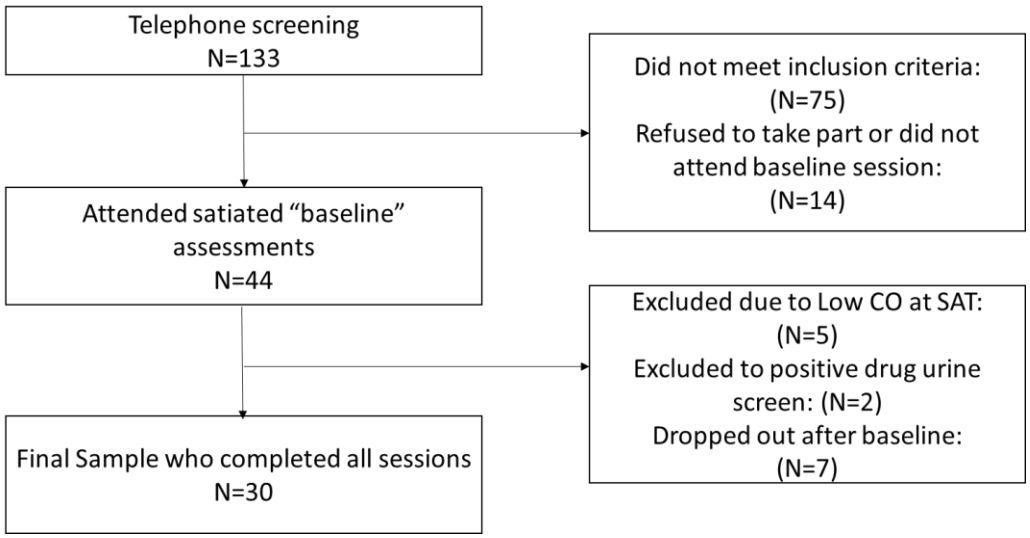
Supplementary Method

Participant recruitment



Supplementary Figure 1: flow diagram for study recruitment and assessments. The final sample included 30 participants who completed all three sessions.

Procedure

Supplementary table 1: Schedule of assessments on the satiated and abstinent sessions.

SATIATED		**ABSTINENT**	
TIME		**TIME**	
0	Arrival	**0**	Arrival
12	MPSS QSU [1]	**5**	MPSS QSU HR BP [1]
30	Cigarette	**10**	Drug administration
35	MPSS QSU [2]	**70**	MPSS QSU HR BP [2]
60	Visual Probe	**130**	MPSS QSU HR BP [3]
68	PRT	**190**	Visual Probe
75	MPSS QSU [3]	**198**	PRT
-	-	**200**	MPSS QSU [4]

Supplementary Results

Time since last smoked

There was a significant main effect of abstinence ($F(1,29)= 3289.03$, $p<.001$, $\eta^2p =.99$) where on the satiated session, participants last smoked M: 0.41 (SD: 0.40) hours previously, in comparison to abstinent. There was no main effect of drug ($F(1,29)=0.18$, $p=.675$, $\eta^2p=.006$). Participants last smoked M: 10.97 (SD:0.96) hours previously on the CBD session and M:11.03 (SD:0.95) on the PBO session.

CO

There was a significant main effect of abstinence ($F(1,29)= 167.83$ $p<.001$, $\eta^2p=.84$) which shows CO was higher in the satiated condition (M: 17.73 ppm SD: 6.63) than in the abstinent conditions. There was no main effect of drug ($F(1,29)=6.13$, $p=.019$, $\eta^2p=.17$) where CO was 4.27ppm (SD:2.23) for CBD and 4.17 (SD:2.69) for PBO. Thus abstinence was biologically verified.

MPSS

Amount of time spent with urge

Pre-drug time spent with urges was significantly greater under abstinent than satiated sessions $F(1,29)=27.96$, $p<.001$, $\eta^2p=.49$ suggesting abstinence increased the amount of time spent with urges to smoke. There was no different between CBD and PBO, pre-drug administration ($p=0.536$; JZS BF in support of the null= 5.86). To investigate if CBD attenuated craving in comparison to placebo on abstinent sessions, we conducted an ANOVA that showed a main effect of time ($F(3,87)=8.65$, $p<.001$, $\eta^2p=.23$) which showed that time spent with urges decreased from T1 (3.17, 95% CI 2.79-3.64) to T3 (2.40, 95% CI 1.97-2.82), and increased from T3 to T4 (2.80, 95% CI 2.38-3.22). However there was no effect of drug ($p=1.00$; JZS BF in support of the null= 7.08) There was no drug x time interaction $F(2, 68)=.25$, $p=.81$, $\eta^2p=0.00$).

Strength of urges

Pre-drug strength of urges was significantly greater under abstinent than satiated sessions $F(1,29)=26.26$, $p<.001$, $\eta^2p=.48$ suggesting abstinence increased the strength of urges. There was no different between CBD and PBO, pre drug administration ($p=0.879$; JZS BF in support of the null= 6.99). To investigate if CBD attenuated craving in comparison to placebo on abstinent sessions, we conducted an ANOVA that showed a main effect of time ($F(3,87)=4.33$, $p=.007$, $\eta^2p=.13$) which showed that time spent with urges decreased significantly from T1 (2.92, 95% CI 2.58-3.25) to T2 (2.40, 95% CI 2.02-2.78), and increased from T2 to T3 (2.48, 95% CI 2.10-2.87) and T4 (2.73, 95% CI 2.31-3.16). However there was no effect of drug ($p=.61$; JZS BF in support of the null= 6.20) There was no drug x time interaction $F(3, 87)=0.65$, $p=0.58$, $\eta^2p=0.02$).

Side effects

Strong Drug effect: There was no main effect of drug ($F(1,29)=.80$, $p=.379$, $\eta^2p=.03$) confirmed by Bayesian analysis (JZS BF: 4.82), time ($F(2,58)=.37$ $p=.695$, $\eta^2p=.01$), or drug x time interaction ($F(2,58)=2.18$, $p=.123$, $\eta^2p=.07$).

Good Drug effect: There was no main effect of drug ($F(1,29)=.10$, $p=.922$, $\eta^2p=.00$) confirmed by Bayesian analysis (JZS BF:7.04), time ($F(2,58)=2.76$, $p=.072$, $\eta^2p=.09$), or drug x time interaction ($F(2,58)=2.18$, $p=.123$, $\eta^2p=.07$).

Willing to take drug again: There was no main effect of drug ($F(1,29)=2.35$, $p=.136$, $\eta^2p=.08$) confirmed by Bayesian analysis (JZS BF: 2.35), time ($F(2,58)=0.42$, $p=.661$, $\eta^2p=.01$, or drug x time interaction ($F(2,58)=1.12$, $p=.306$, $\eta^2p=.040$).

Like drug effect: There was no main effect of drug ($F(1,29)=.01$, $p=.947$, $\eta^2p=.00$) confirmed by Bayesian analysis (JZS BF: 7.06) or drug x time interaction ($F(2,58)=.03$, $p=.968$, $\eta^2p=.00$). There was a main effect of time ($F(2,58)=3.53$, $p=.036$, $\eta^2p=.11$) which showed liking decreased over time.

I have a stomach ache: There was no main effect of drug ($F(1,29)=.00$, $p=.957$, $\eta^2p=.00$) confirmed by Bayesian analysis (JZS BF:7.07), time ($F(2,58)=.01$, $p=.988$, $\eta p^2=.000$), or drug x time interaction ($F(2,58)=1.44$, $p=.245$, $\eta^2p=.05$).

I have a headache: There was a drug x time interaction ($F(2,58)=3.17$, $p=.049$, $\eta^2p=.099$). Exploration of the interaction showed no significant pairwise comparisons. There was no main effect of drug ($F(1,29)=.04$, $p=.839$, $\eta^2p=.00$) confirmed by Bayesian analysis (JZS BF:6.93), or time ($F(2,58)=.80$, $p=.456$, $\eta^2p=.03$).